



DIVISION 21 FIRE SUPPRESSION

FIRE DETECTION & ALARM

Fire detection and alarm systems are critical in assuring life safety and to protect University owned property. It is imperative that they perform their vital function properly and reliably.

These standards are applicable to new installations of fire and smoke detection and alarm systems in all Campus facilities, as well as all modifications, upgrades and renovations to existing systems.

The contractor shall perform maintenance and adjustments for the duration of the substantial completion warranty period. A full annual inspection shall be conducted prior to turning over the system fully to the University, inclusive of all testing, records, and certificates.

Designer shall review and comply with the provisions within the current version of the Facilities Management (FM) Fire Suppression Master Plan and Fire Alarm Master Plan. All projects or renovations will include monitoring and reporting to the university head end at University Safety and Security Services (located at East Campus) and the Manager of Life Safety Systems (located in Osborne) and include graphics updates.

Equipment identification shall follow the existing Facilities Management asset tag scheme. Submit list of new or replacement equipment to FM Planned Maintenance Manager for confirmation.

Equipment labeling shall follow the AU electrical labeling identifying power source.

All new work or changes require updating of the fire alarms graphics and alarms, which shall be the responsibility of the Contractor.

Designer should review the Generator division specification for integration capabilities with fire alarm system monitoring.

SPRINKLER AND STANDPIPE SYSTEM MONITORING

Each water-flow switch will be provided with an integral 20 to 40 second time delay device to prevent nuisance alarms from surges in water pressure. Permanent provision shall be made for testing each switch by water flow equivalent to that from a standard 1/2 inch sprinkler head.

Separate water-flow switch(es) shall be provided for each floor, just downstream of every zone valve, on each branch from the riser.



Sprinkler supervisory circuits for monitoring valve tamper are limited to no more than three valves each, on either one floor or one riser. Other sprinkler system supervisory functions, such as dry pipe/pre-action system hi-low air pressure monitoring, must be on individual circuits.

The room's housing sprinkler control valves will be marked with a white sign with red letters stating, "Sprinkler Controls Inside". All sprinkler control valves shall be numbered and identify what section of the sprinkler it controls.

Inspector's test valves will be located at the highest point and whenever possible, piped to ground level and outside of the building with the appropriate 1/2" test fitting installed on the end of the pipe. Test valve discharge will not flow onto or across any sidewalk, stairs or public walkways.

Post indicator valves will be provided for each sprinkler system. Post indicator valve control shall be tied into the Fire Alarm Control Panel (FACP) on a separate module and wired in such a manner as to activate the "Trouble Alarm".

Standpipe flow switches shall be tied into the FACP on a separate module and wired in such a manner as to activate the "General Fire Alarm". Each standpipe flow switch will be provided with a spring loaded ball type check valve or an integral 15 to 20 second time delay device to prevent nuisance alarms from surges in water pressure.

Standpipe tamper switches shall be tied into the Fire Alarm Control Panel on a separate module and wired as to activate the "Trouble Alarm". The operation of the tamper switch shall not affect the operation of the flow switch and shall not activate the General Fire Alarm.

Standpipe control valves shall be enclosed in a cabinet or room and clearly marked by a white sign with red letters stating, "Fire Department Use Only". Standpipe fire hoses will not be installed in the hose cabinets; however, each standpipe connection must match District of Columbia Fire Department threads and diameter.

Systems with associated backflow preventers shall be tested as described in Division 22.

The use of dissimilar metals within piping systems is prohibited. Exceptions require Facilities Management approval and are limited to die-electric fittings only such as when existing material incompatibilities are discovered during renovations.

KITCHEN EXHAUST HOOD EXTINGUISHING SYSTEMS

Systems shall be interconnected with the fire alarm, on a dedicated zone. The exhaust fan must continue running after the system has been discharged to remove smoke, but the supply fan serving the space with the hood shall stop.



Appliances under the kitchen hood must have their gas or electric fuel automatically shut off upon agent release. Both of these functions are normally performed directly by the extinguishing system, through mechanical linkage to the gas valve or via internal microswitches controlling shunt trip breakers. All shut down devices shall require manual reset prior to fuel or power restoration.

Initiation devices shall be fusible link rather than electrical devices for standardization of hood suppression systems, reduction of maintenance costs and to simplify training for emergency response personnel. University Safety and Security Services has approved the following suppression system for installation in Campus facilities:

A "Puff Test" shall be performed and witnessed by AU Fire Safety personnel and District of Columbia Fire Marshall.

The contractor shall perform maintenance and adjustments for the duration of the substantial completion warranty. Coordinate with Facilities Management Life Safety Manager prior to performing any work. All routine maintenance and service must be scheduled two-weeks in advance and will be supervised by University personnel.

Integration with the Building Automation System and commissioning testing is required for all kitchen exhaust hood systems. Refer to additional alarm and connection requirements in Division 25.

END OF DIVISION 21